AMENDMENTS TO THE CLAIMS

1.   (Currently amended) A method of ~~optimizing~~ <u>preparing data that describes</u> the layout of a microdevice to be created by a photolithographic process <u>for the application of a resolution enhancement technique</u>, comprising the acts of:

~~storing~~ <u>reading</u> a microdevice layout <u>that is stored</u> in a hierarchical database having a number of levels, each level including definitions of polygons corresponding to features in the microdevice, each polygon being defined as a number of vertices;

analyzing interacting polygons in the database;

promoting polygons or portions thereof such that polygons that interact are defined on the same hierarchical level of the database;

fragmenting the polygons in a level of the database containing any promoted polygons so that the vertices that define each polygon are optimized for the application of ~~a tool for~~ <u>the</u> resolution enhancement techniques (RET)~~; and~~

~~applying the RET tool to the layout~~.

2.   (Original) The method of Claim 1, additionally comprising:

fragmenting a portion of the layout for the application of an RET prior to the step of analyzing the interacting polygons.

3.   (Original) The method of Claim 1, wherein the act of promoting polygons includes:

defining a copy of a polygon or portion thereof in another database level containing an interacting polygon without altering the fragmentation of the polygons in the level from which the promotions are made.

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4.   (Original) The method of Claim 1, in which the promoted portions of polygons are edge segments.

5.   (Original) The method of Claim 4, further comprising:

keeping a record of which edge segments in a database level have had copies promoted to another hierarchy level.

6.   (Original) The method of Claim 4, further comprising:

keeping a record of which edge segments in a database level have been promoted from another hierarchy level.

7.   (Currently amended) A method of ~~performing~~ preparing data for the application of an optical and process correction (OPC) tool to a layout stored in a hierarchical database ~~defining~~ that defines a microdevice to be manufactured lithographically, comprising the acts of:

fragmenting polygons in the levels of the hierarchical database so that each polygon is optimized for the application of the OPC tool;

selectively promoting interacting polygons or portions thereof such that interacting polygons are defined on the same database level, wherein said selective promotion does not affect fragmentation of the polygons or portions thereof that are promoted; and

refragmenting the polygons and any promoted polygons or portions thereof for the application of [[an]] the OPC tool~~; and~~

~~applying the OPC tool~~.

8.   (Original) The method of Claim 7, in which the promoted portions of polygons are edge segments.

9.   (Canceled)

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10.   (Currently amended) A method of preparing data stored within a hierarchical database prior to performing optical and process correction (OPC) on a hierarchical database defining the data, wherein the data defines a number of polygons that describe a microdevice to be manufactured lithographically, comprising:

selectively promoting copies of polygons or portions thereof in the database such that interacting polygons or portions thereof are defined in the same database level; and

fragmenting polygons defined in a level of the hierarchical database including any promoted polygons or portions thereof for the application of an OPC tool; and

applying the OPC tool to the fragmented database levels.

11.   (Original) The method of Claim 10, in which the promoted portions of polygons are edge segments.

12-27. (Canceled)

28.   (New) A computer readable medium containing a sequence of instructions that are executable by a computer system to perform a method of preparing data that describes the layout of a microdevice to be created by a photolithographic process for the application of a resolution enhancement technique, by performing the acts of:

reading a microdevice layout that is stored in a hierarchical database having a number of levels, each level including definitions of polygons corresponding to features in the microdevice, each polygon being defined as a number of vertices;

analyzing interacting polygons in the database;

promoting polygons or portions thereof such that polygons that interact are defined on the same hierarchical level of the database; and

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fragmenting the polygons in a level of the database containing any promoted polygons so that the vertices that define each polygon are optimized for the application of the resolution enhancement technique.

29.   (New) A computer readable medium containing a sequence of instructions that are executable by a computer system to perform a method of preparing data for the application of an optical and process correction (OPC) tool to a layout stored in a hierarchical database that defines a microdevice to be manufactured lithographically, comprising the acts of:

fragmenting polygons in the levels of the hierarchical database so that each polygon is optimized for the application of the OPC tool;

selectively promoting interacting polygons or portions thereof such that interacting polygons are defined on the same database level, wherein said selective promotion does not affect fragmentation of the polygons or portions thereof that are promoted; and

refragmenting the polygons and any promoted polygons or portions thereof for the application of the OPC tool.

30. (New) A computer readable medium containing a sequence of instructions that are executable by a computer system to perform a method of preparing data that is stored within a hierarchical database that defines a number of polygons describing a microdevice to be manufactured lithographically prior to using an optical and process correction (OPC) tool on the data by:

selectively promoting copies of polygons or portions thereof in the database such that interacting polygons or portions thereof are defined in the same database level; and

fragmenting polygons defined in a level of the hierarchical database including any promoted polygons or portions thereof for the application of the OPC tool.

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